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\*Admitted only in Maryland  
\*Admitted only in Virginia  
\*Practice limited to  
Federal Agencies

October 29, 2003

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Commissioner for Patents  
P.O. Box 1450  
Washington, D.C. 20231

Re: U.S. Utility Patent Application  
Appl. No. 09/604,097; Filed June 27, 2000  
For: **Semiconductor Light Emitting Device And  
Manufacturing Method Therefor**  
Inventors: Yukio SHAKUDA  
Our Ref: 2005.0020003 (As Amended)

Sir:

Transmitted herewith for appropriate action are the following documents:

1. Fifth Supplemental Information Disclosure Statement;
2. Form PTO-1449 listing **FOUR HUNDRED EIGHTY-SIX (486)** documents (47 pages);
3. Copies of the **FOUR HUNDRED EIGHTY-SIX (486)** cited document(s) as listed on Form PTO-1449; and
4. One (1) return postcard.

It is respectfully requested that the attached postcard be stamped with the date of filing of these documents, and that it be returned to our courier. In the event that extensions of time are necessary to prevent abandonment of this patent application, then such extensions of time are hereby petitioned.

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Page 2

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency,  
or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Thomas C. Fiala

Attorney for Applicants

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Enclosures

SKGF\_DC1:193533.1



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Yukio SHAKUDA

Appl. No. 09/604,097

Filed: June 27, 2000

For: **Semiconductor Light Emitting  
Device And Manufacturing  
Method Therefor**

Confirmation No. 6648

Art Unit: 2828

Examiner: James W. Davie

Atty. Docket: 2005.0020003

**Fifth Supplemental Information Disclosure Statement**

Commissioner for Patents  
PO Box 1450  
Alexandria, VA 22313-1450

Sir:

Listed on accompanying Form PTO-1449 are documents that may be considered material to the examination of this application, in compliance with the duty of disclosure requirements of 37 C.F.R. §§ 1.56, 1.97 and 1.98.

Applicant has listed publication dates on the attached PTO-1449 based on information presently available to the undersigned. However, the listed publication dates should not be construed as an admission that the information was actually published on the date indicated.

Applicant reserves the right to establish the patentability of the claimed invention over any of the information provided herewith, and/or to prove that this information may not be prior art, and/or to prove that this information may not be enabling for the teachings purportedly offered.

This statement should not be construed as a representation that a search has been made, or that information more material to the examination of the present patent application does not exist. The Examiner is specifically requested not to rely solely on the material submitted herewith.

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This Information Disclosure Statement is being filed before the mailing of a first Office Action after the filing of a request for continued examination under 37 C.F.R. § 1.114. No statement or fee is required. 37 C.F.R. § 1.97(b).

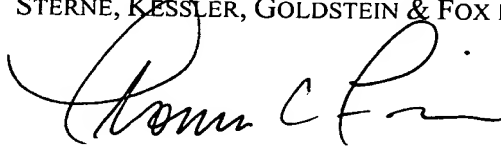
Documents AA1-AD1, AA2-AD2, AA3-AD3, AA4-AD4, AA5-AD5, AA6-AD6, AA7-AD7, AA8-AD8, AA9-AD9, AA10-AD10, AA11-AD11, AA12-AD12, AA13-AD13, AA14-AD14, AA15-AD15, AA16-AD16, AA17-AD17, AA18-AD18, AA19-AD19, AA20-AD20, AA21-AD21, AA22-AD22, AA23-AD23, AA24-AD24, AA25-AD25, AA26-AD26, AA27-AD27, AA28-AD28, AA29-AD29, AA30-AD30, AA31-AD31, AA32-AD32, AA33-AD33, AA34-AD34, AA35-AD35, AA36-AD36, AA37-AD37, AA38-AD38 and AA39-AD39 are in a foreign language. For an explanation of relevance, an English-language abstract is attached as the first page of each document.

It is respectfully requested that the Examiner initial and return a copy of the enclosed PTO-1449, and indicate in the official file wrapper of this patent application that the documents have been considered.

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Thomas C. Fiala  
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Date: 10/29/03

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FORM PTO-1449

## FIFTH SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

ATTY. DOCKET NO.  
2005.0020003APPLICATION NO.  
09/604,097APPLICANTS  
Yukio SHAKUDAFILING DATE  
June 27, 2000GROUP  
2828

## FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION
	AA1	57-153479 A	09/1982	JP			Abstract Enclosed
	AB1	57-155793 A	09/1982	JP			Abstract Enclosed
	AC1	62-119196 A	05/1987	JP			Abstract Enclosed
	AD1	62-165948 A	07/1987	JP			Abstract Enclosed

## OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AE1	Ando, T., "Self-Consistent Results for a GaAs/Al <sub>x</sub> Ga <sub>1-x</sub> As Heterojunction. I. Subband Structure and Light Scattering Spectra", <i>J. Phys. Soc. Jpn.</i> 51, pp. 3893-3899 (1982).
	AF1	Ando, T., " Self-Consistent Results for a GaAs/Al <sub>x</sub> Ga <sub>1-x</sub> As Heterojunction. II. Low Temperature Mobility", <i>J. Phys. Soc. Jpn.</i> 51, pp. 3900-3907 (1982).
	AG1	Ando, T. and Mori, S., "Effective-Mass Theory of Semiconductor Heterojunctions and Superlattices," <i>Surf. Sci.</i> 113, pp. 124-130 (1982).
	AH1	Hedin, L. and Lundqvist, B.I., "Explicit local exchange-correlation potentials," <i>J. Phys. C: Solid St. Phys.</i> , Vol. 4, pp. 2064-2082 (1971).
	AI1	Ploog, K., "Molecule Beam Epitaxy of Artificially Layered III-V Semiconductors: Ultrathin-Layer (GaAs) <sub>m</sub> (AlAs) <sub>n</sub> Superlattices and Delta (δ-) Doping in GaAs", <i>Physica Scripta</i> , Vol. T19, pp. 136-146 (1987).
	AJ1	Ploog, K., "Delta- (δ-) Doping In MBE-Grown GaAs: Concept and Device Application," <i>Journal of Crystal Growth</i> 81, North-Holland, pp. 304-313 (1987).
	AK1	Ogawa, M. and Baba, T., "Heavily Si-Doped GaAs and AlAs/n-GaAs Superlattice Grown by Molecular Beam Epitaxy," <i>Japanese Journal of Applied Physics</i> , Vol. 24, No. 8, pp. L572-L574 (August 1995).

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION
	AA2	63-188977 A	08/1988	JP			Abstract Enclosed
	AB2	63-222488 A	09/1988	JP			Abstract Enclosed
	AC2	63-222489 A	09/1988	JP			Abstract Enclosed
	AD2	1-14717 B2	03/1989	JP			Abstract Enclosed

## OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AE2	Sasa, S. <i>et al.</i> , "Si Atomic-Planar-Doping in GaAs Made by Molecular Beam Epitaxy," <i>Japanese Journal of Applied Physics</i> , Vol. 24, No. 8, pp. L602-L604 (August 1995).
	AF2	Yao, T. <i>et al.</i> , "The effects of substrate temperature on the donor ionization energy and on the material properties of selectively doped short-period GaAs:Si/AlAs superlattices," <i>J. Appl. Phys.</i> 62(5), American Institute of Physics, pp. 1925-1930 (September 1, 1987).
	AG2	Horikoshi, Y. <i>et al.</i> , "High-Mobility Two-Dimensional Electron Gas from Delta-Doped Asymmetric Al <sub>x</sub> Ga <sub>1-x</sub> As/GaAs/Al <sub>y</sub> Ga <sub>1-y</sub> As Quantum Wells," <i>Japanese Journal of Applied Physics</i> , Vol. 26, No. 2, pp. 263-266 (February 1987).
	AH2	Ploog, K. <i>et al.</i> , "Improved electron mobility by AlAs spacer in one-sided selectively doped Al <sub>x</sub> Ga <sub>1-x</sub> As/GaAs multiple quantum well heterostructures," <i>Appl. Phys. Lett.</i> 50 (18), American Institute of Physics, pp. 1237-1239 (May 4, 1987).
	AI2	Ploog, K., "GaAs Doping Superlattices A New Class of Semiconductor Materials Grown by Molecular Beam Epitaxy," <i>Collected Paper of MBE-CST-2</i> , Tokyo, pp. 17-20 (1982).
	AJ2	Theis, T.N. and Wright, S.L., "Origin of 'residual' persistent photoconductivity in selectively doped GaAs/Al <sub>x</sub> Ga <sub>1-x</sub> As heterojunctions," <i>Appl. Phys. Lett.</i> 48 (20), American Institute of Physics, pp. 1374-1376 (May 19, 1986).
	AK2	Hiyamizu, S. <i>et al.</i> , "A New Heterostructure for 2DEG System with a Si Atomic-Planar-Doped AlAs-GaAs-AlAs Quantum Well Structure Grown by MBE," <i>Japanese Journal of Applied Physics</i> , Vol. 24, No. 6, pp. L431-L433 (June 1985).

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION
	AA3	1-204425 A	08/1989	JP			Abstract Enclosed
	AB3	2-229476 A	09/1990	JP			Abstract Enclosed
	AC3	2-291125 A	11/1990	JP			Abstract Enclosed
	AD3	3-80198 A	04/1991	JP			Abstract Enclosed

## OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

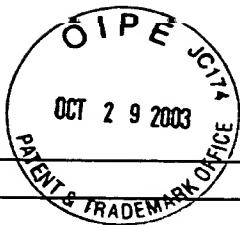
	AE3	Baba, T. <i>et al.</i> , "AlAs/n-GaAs superlattice and its application to high-quality two-dimensional electron gas systems," <i>J. Appl. Phys.</i> 59 (2), American Institute of Physics, pp. 526-532 (January 15, 1986).
	AF3	Street, R.A. <i>et al.</i> , "Luminescence of <i>n-i-p-i</i> heterostructures," <i>Physical Review B</i> , Vol. 33, No. 10, pp. 7043-7046 (May 15, 1986).
	AG3	Schubert, E.F. and Ploog, K., "Interpretation of Capacitance-Voltage Profiles from Delta-Doped GaAs Grown by Molecular Beam Epitaxy," <i>Japanese Journal of Applied Physics</i> , Vol. 25, No. 7, pp. 966-970 (July 1986).
	AH3	Nishikawa, Y. <i>et al.</i> , "MOCVD Growth Of InGaAlP Using Ethyldimethylindium As An In Source And Application To Visible-Region Lasers," <i>Journal of Crystal Growth</i> 104, Elsevier Science Publishers B.V., pp. 245-249 (1990).
	AI3	Miller, L.M. <i>et al.</i> , "Characteristics of step-graded separate confinement quantum well lasers with direct and indirect barriers," <i>J. Appl. Phys.</i> 68 (5), American Institute of Physics, pp. 1964-1967 (September 1, 1990).
	AJ3	Sawada, T. and Majerfeld, A., "Carrier Concentration and Composition Profiling for GaAs/AlGaAs Laser Diodes," <i>Bulletin of the Faculty of Engineering</i> , Hokkaido University, No. 133, pp. 59-72 (1986).
	AK3	LePore, J.J., "An improved technique for selective etching of GaAs and Ga <sub>1-x</sub> Al <sub>x</sub> As," <i>J. Appl. Phys.</i> 51 (12), American Institute of Physics, pp. 6441-6442 (December 1980).

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June 27, 2000GROUP  
2828

## FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION
	AA4	3-31678 B2	05/1991	JP			Abstract Enclosed
	AB4	3-252176 A	11/1991	JP			Abstract Enclosed
	AC4	3-252177 A	11/1991	JP			Abstract Enclosed
	AD4	3-252178 A	11/1991	JP			Abstract Enclosed

## OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AE4	Sandroff, C.J. <i>et al.</i> , "Dramatic enhancement in the gain of a GaAs/AlGaAs heterostructure bipolar transistor by surface chemical passivation," <i>Appl. Phys. Lett.</i> 51 (1), American Institute of Physics, pp. 33-35 (July 6, 1987).
	AF4	Takado, N. <i>et al.</i> , "Chemically enhanced focused ion beam etching of deep grooves and laser-mirror facets in GaAs under Cl <sub>2</sub> gas irradiation using a fine nozzle," <i>Appl. Phys. Lett.</i> 50(26), American Institute of Physics, pp. 1891-1893 (June 29, 1987).
	AG4	Ohba, Y. and Hatano, A., "H-Atom Incorporation in Mg-Doped GaN Grown by Metalorganic Chemical Vapor Deposition," <i>Jpn. J. Appl. Phys.</i> , Vol. 33, Part 2, No. 10A, pp. L1367-L1369 (October 1, 1994).
	AH4	Olszakier, M. <i>et al.</i> , "Photoinduced Intersubband Absorption in Undoped Multi-Quantum-Well Structures," <i>Physical Review Letters</i> , Vol. 62, No. 25, pp. 2997-3000 (June 19, 1989).
	AI4	Seilmeier, A. <i>et al.</i> , "Direct Observation of Intersubband Relaxation in Narrow Multiple Quantum Well Structures," <i>Solid-State Electronics</i> , Vol. 31, No. 3/4, Pergamon Journals Ltd., pp. 767-770 (1988).
	AJ4	Yang, C. and Pan, D., "Intersubband absorption of silicon-based quantum wells for infrared imaging," <i>J. Appl. Phys.</i> 64(3), American Institute of Physics, pp. 1573-1575 (August 1, 1988).
	AK4	Andersson, J.Y. and Landgren, G., "Intersubband transitions in single AlGaAs/GaAs quantum wells studied by Fourier transform infrared spectroscopy," <i>J. Appl. Phys.</i> 64(8), American Institute of Physics, pp. 4123-4127 (October 15, 1988).

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION
	AA5	4-10665 A	01/1992	JP			Abstract Enclosed
	AB5	4-15200 B2	03/1992	JP			Abstract Enclosed
	AC5	4-163968 A	06/1992	JP			Abstract Enclosed
	AD5	4-163970 A	06/1992	JP			Abstract Enclosed

## OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AE5	Goldberg, B.B. <i>et al.</i> , "Inelastic Light Scattering Of Valence Subband Transitions In GaAs/GaAlAs Multiple Quantum Wells," <i>Surface Science</i> 196, Elsevier Science Publishers B.V., pp. 619-625 (1988).
	AF5	Julien, F.H. <i>et al.</i> , "Optical saturation of intersubband absorption in GaAs-Al <sub>x</sub> Ga <sub>1-x</sub> As quantum wells," <i>Appl. Phys. Lett.</i> 53(2), American Institute of Physics, pp. 116-118 (July 11, 1988).
	AG5	Goossen, K.W. <i>et al.</i> , "Conduction-band offset determination in GaAs-Al <sub>x</sub> Ga <sub>1-x</sub> As through measurement of infrared internal photoemission," <i>Physical Review B</i> , Vol. 36, No. 17, The American Physical Society, pp. 9370-9373 (December 15, 1987).
	AH5	Kastalsky, A. <i>et al.</i> , "Photovoltaic detection of infrared light in a GaAs/AlGaAs superlattice," <i>Appl. Phys. Lett.</i> 52(16), American Institute of Physics, pp. 1320-1322 (April 18, 1988).
	AI5	Bäuerle, R.J. <i>et al.</i> , "Picosecond infrared spectroscopy of hot carriers in a modulation-doped Ga <sub>0.47</sub> In <sub>0.53</sub> As multiple-quantum-well structure," <i>Physical Review B</i> , Vol. 38, No. 6, The American Physical Society, pp. 4307-4310 (August 15, 1988).
	AJ5	Seilmeier, A. <i>et al.</i> , "Intersubband Relaxation in GaAs-Al <sub>x</sub> Ga <sub>1-x</sub> As Quantum Well Structures Observed Directly by an Infrared Bleaching Techniques," <i>Physical Review Letters</i> , Vol. 59, No. 12, The American Physical Society, pp. 1345-1348 (September 21, 1987).
	AK5	Abstreiter, G. <i>et al.</i> , "Electronic Excitations In Narrow GaAs/Al <sub>x</sub> Ga <sub>1-x</sub> As Quantum Well Structures," <i>Surface Sciences</i> 196, Elsevier Science Publishers B.V., pp. 613-618 (1988).

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION
	AA6	4-163971 A	06/1992	JP			Abstract Enclosed
	AB6	4-164895 A	06/1992	JP			Abstract Enclosed
	AC6	4-170390 A	06/1992	JP			Abstract Enclosed
	AD6	4-247637 A	09/1992	JP			Abstract Enclosed

## OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AE6	Seilmeier, A. <i>et al.</i> , "Picosecond Intersubband Spectroscopy," <i>Superlattices and Microstructures</i> , Vol. 5, No. 4, Academic Press Limited, pp. 569-574 (1989).
	AF6	Kane, M.J. <i>et al.</i> , "Intersubband Absorption and Infrared Modulation in GaAs/AlGaAs Single Quantum Wells," <i>Superlattices and Microstructures</i> , Vol. 5, No. 4, Academic Press Limited, pp. 587-589 (1989).
	AG6	Asai, H. <i>et al.</i> , "Structure Dependence of Intersubband Absorption in InGaAs/InAlAs Multiquantum Wells," 6 pages.
	AH6	Zhou, X. <i>et al.</i> , "Intersubband absorption in strained $\text{In}_x\text{Ga}_{1-x}\text{As}/\text{Al}_{0.4}\text{Ga}_{0.6}\text{As}$ ( $0 \leq x \leq 0.15$ ) multiquantum wells," <i>Appl. Phys. Lett.</i> 54(9), American Institute of Physics, pp. 855-856 (February 27, 1989).
	AI6	Rosencher, E. <i>et al.</i> , "Observation of nonlinear optical rectification at 10.6 $\mu\text{m}$ in compositionally asymmetrical AlGaAs multiquantum wells," <i>Appl. Phys. Lett.</i> 55(16), American Institute of Physics, pp. 1597-1599 (October 16, 1989).
	AJ6	Fejer, M.M. <i>et al.</i> , "Observation of Extremely Large Quadratic Susceptibility at 9.6–10.8 $\mu\text{m}$ in Electric-Field-Biased AlGaAs Quantum Wells," <i>Physical Review Letters</i> , Vol. 62, No. 9 The American Physical Society, pp. 1041-1044 (February 27, 1989).
	AK6	Walrod, D. <i>et al.</i> , "Optical nonlinearities due to subband structures in $\text{Al}_{0.08}\text{In}_{0.92}\text{Sb}/\text{InSb}$ superlattices," <i>Appl. Phys. Lett.</i> 56(3), American Institute of Physics, pp. 218-220 (January 15, 1990).

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	AA7	4-273175 A	09/1992	JP			Abstract Enclosed
	AB7	4-297023 A	10/1992	JP			Abstract Enclosed
	AC7	4-321279 A	11/1992	JP			Abstract Enclosed
	AD7	4-321280 A	11/1992	JP			Abstract Enclosed

## OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AE7	Kinch, M.A. and Yariv, A., "Performance limitations of GaAs/AlGaAs infrared superlattices," <i>Appl. Phys. Lett.</i> 55 (2), American Institute of Physics, pp. 2093-2095 (November 13, 1989).
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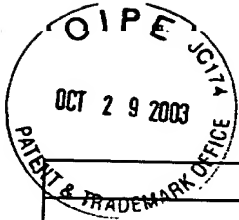
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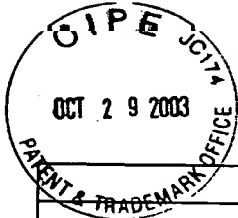
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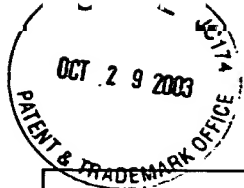
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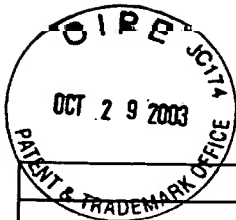
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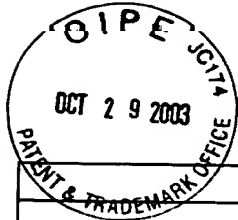
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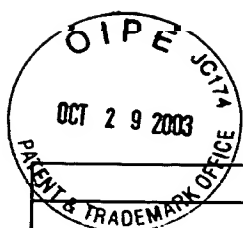
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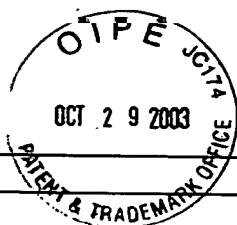
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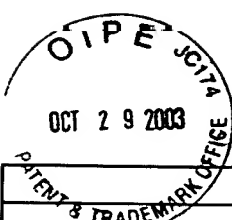
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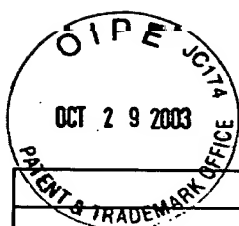
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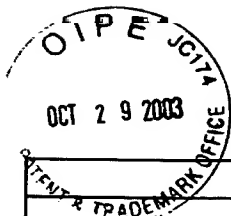
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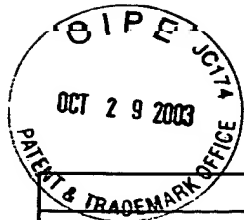
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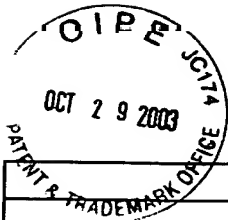
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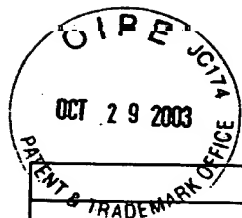


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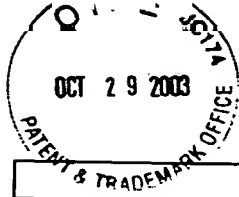
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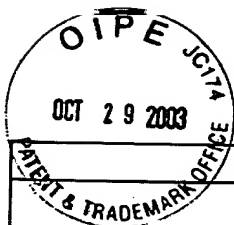
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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION
	AA45						
	AB45						
	AC45						
	AD45						

## OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

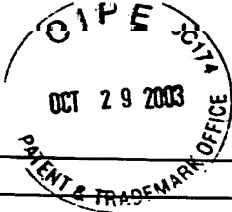
	AE45	Pearlton, S.J. <i>et al.</i> , "Ar <sup>+</sup> -ion milling characteristics of III-V nitrides," <i>J. Appl. Phys.</i> 76(2), American Institute of Physics, pp. 1210-1215 (July 15, 1994).
	AF45	Pearlton, S.J. <i>et al.</i> , "Letter to the editor: Dry etching of thin-film InN, AlN and GaN," <i>Semicond. Sci. Technol.</i> 8, pp. 310-312 (1993).
	AG45	Shul, R.J. <i>et al.</i> , "Comparison of Dry Etch Techniques for GaN," 9 pages.
	AH45	Tojyo, T. <i>et al.</i> , "GaN-based High Power Blue-violet Laser Diodes," 5 pages.
	AI45	Koike, M. <i>et al.</i> , "RT-CW operation of GaN-based Laser Diodes improved by GaN/AlInN optical guiding lasers," 2 pages.
	AJ45	Lagerstedt, O. <i>et al.</i> , "Properties of GaN tunneling MIS light-emitting diodes," <i>J. Appl. Phys.</i> 49(5), American Institute of Physics, pp. 2953-2957 (May 1978).
	AK45	Self, K., "Prolog to Emerging Gallium Nitride Based Devices," <i>Proceedings Of The IEEE</i> , Vol. 83, No. 10, p. 1305 (October 1995).

EXAMINER

DATE CONSIDERED

**EXAMINER:** Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

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FORM PTO-1449

## FIFTH SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

ATTY. DOCKET NO.  
2005.0020003APPLICATION NO.  
09/604,097APPLICANTS  
Yukio SHAKUDAFILING DATE  
June 27, 2000GROUP  
2828

## FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION
	AA46						
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	AC46						
	AD46						

## OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AE46	Mohammad, S.N. <i>et al.</i> , "Emerging Gallium Nitride Based Devices," <i>Proceedings of the IEEE</i> , Vol. 83, No. 10, pp. 1306-1355 (October 1995).
	AF46	Goldenberg, B. <i>et al.</i> , "Ultraviolet and violet light-emitting GaN diodes grown by low-pressure metalorganic chemical vapor deposition," <i>Appl. Phys. Lett.</i> 62(4), American Institute of Physics, pp. 381-383 (January 25, 1993).
	AG46	Shan, W. <i>et al.</i> , "Pressure-dependent photoluminescence study of wurtzite GaN," <i>Appl. Phys. Lett.</i> 66(25), American Institute of Physics, pp. 3492-3494 (June 19, 1995).
	AH46	Wang, Y. and Mikkola, D.E., "Shock deformation of sapphire single crystals," <i>Materials Science and Engineering</i> , Elsevier Sequoia, pp. 25-32 (1991).
	AI46	Akasaki, I. And Amano, H., "High efficiency UV and blue emitting devices prepared by MOVPE and low energy electron beam irradiation treatment," <i>Proceedings of SPIE: Physical Concepts of Materials for Novel Optoelectronic Device Applications I: Materials Growth and Characterization</i> , pp. 138-149 (October 28-November 2, 1990).
	AJ46	Neugebauer, J. and Van De Walle, C.G., "Defects And Doping in GaN," pp. 2327-2330.
	AK46	Abernathy, C.R., "The Role of Hydrogen In UHV Growth of III-V Semiconductors," <i>Materials Science Forum</i> , Vols. 148-149, Trans Tech Publications, pp. 3-25 (1994).

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	AA47						
	AB47						
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	AD47						

## OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AE47	Wetzel, C. <i>et al.</i> , "Excitation Spectroscopy and Level Assignment in Piezoelectric Ga <sub>1-x</sub> In <sub>x</sub> N/GaN Quantum Wells," 2 pages.
	AF47	Matsuoka, T. <i>et al.</i> , "Wide-Gap Semiconductor InGaN and InGaN Grown by MOVPE," <i>Journal of Electronic Materials</i> , Vol. 21, No. 2, pp. 157-163 (1992).
	AG47	Albanesi, E.A. <i>et al.</i> , "Theoretical study of the band offsets at GaN/AlN interfaces," <i>J. Vac. Sci. Technol. B</i> 12(4), American Vacuum Society, pp. 2470-2474 (July/August 1994).
	AH47	Dissanayake, A. <i>et al.</i> , "Low-temperature epitaxial growth and photoluminescence characterization of GaN," <i>Appl. Phys. Lett.</i> 65(18), American Institute of Physics, pp. 2317-2319 (October 31, 1994).
	AI47	Wickenden, D.K. <i>et al.</i> , "Thermally annealed GaN nucleation layers and the device-quality metal organic chemical vapor deposition growth of Si-doped GaN films on (00.1) sapphire," <i>J. Appl. Phys.</i> 75(11), American Institute of Physics, pp. 7585-7587 (June 1, 1994).
	AJ47	Saxler, A. <i>et al.</i> , "High quality aluminum nitride epitaxial layers grown on sapphire substrates," <i>Appl. Phys. Lett.</i> 64(3), American Institute of Physics, pp. 339-341 (January 17, 1994).
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